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**Liu et al.**

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(54) **FASTENER DRIVING DEVICE WITH DUST BLOWER**

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***B25C 1/08*** (2006.01)
***B25F 5/00*** (2006.01)

(52) **U.S. Cl.**
CPC .... ***B25F 5/00*** (2013.01); ***B25C 1/08*** (2013.01)

(58) **Field of Classification Search**
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USPC ..... 227/8, 112, 120, 130; 173/168, 169
See application file for complete search history.

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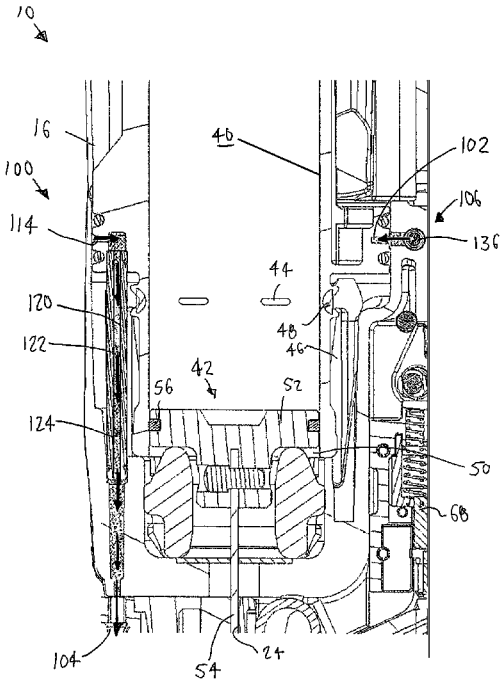
(57) **ABSTRACT**

A fastener driving device includes a housing having an engine receiving portion and a handle portion. A reservoir is configured to receive a gas having a pressure greater than atmospheric pressure and is at least partially located in the handle portion. A dust blower is configured to allow gas in the reservoir to be selectively communicated to atmosphere through an outlet in the engine receiving portion of the housing. The dust blower includes a passageway extending from the reservoir to the outlet in the engine receiving portion, the passageway at least partially circumnavigating the cylinder of the drive engine, and an actuator configured to selectively open and close the passageway so that when the passageway is open, gas from the reservoir is communicated from the reservoir to the outlet, and when the passageway is closed, the gas from the reservoir is not communicated from the reservoir to the outlet.

**9 Claims, 9 Drawing Sheets**



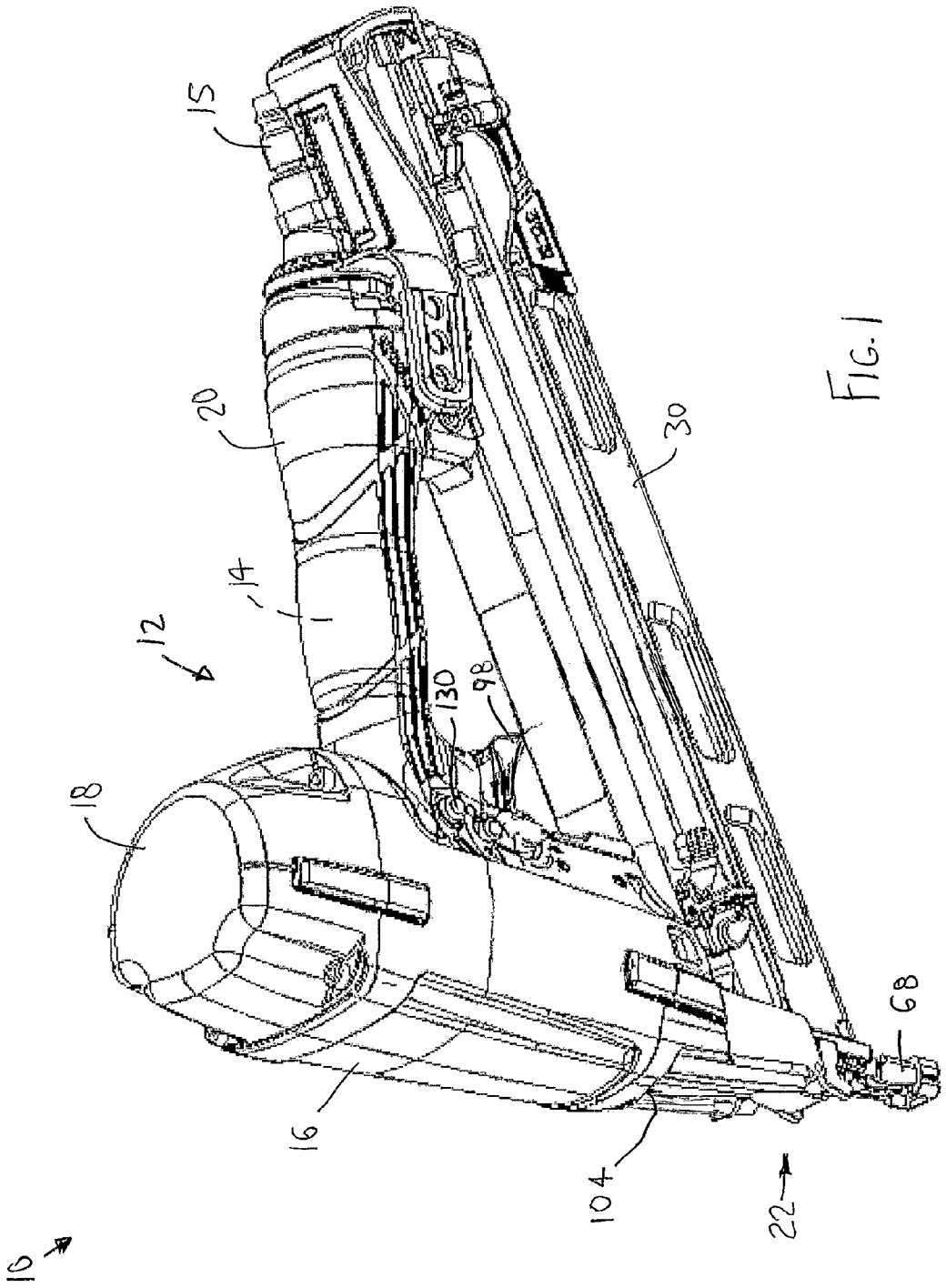
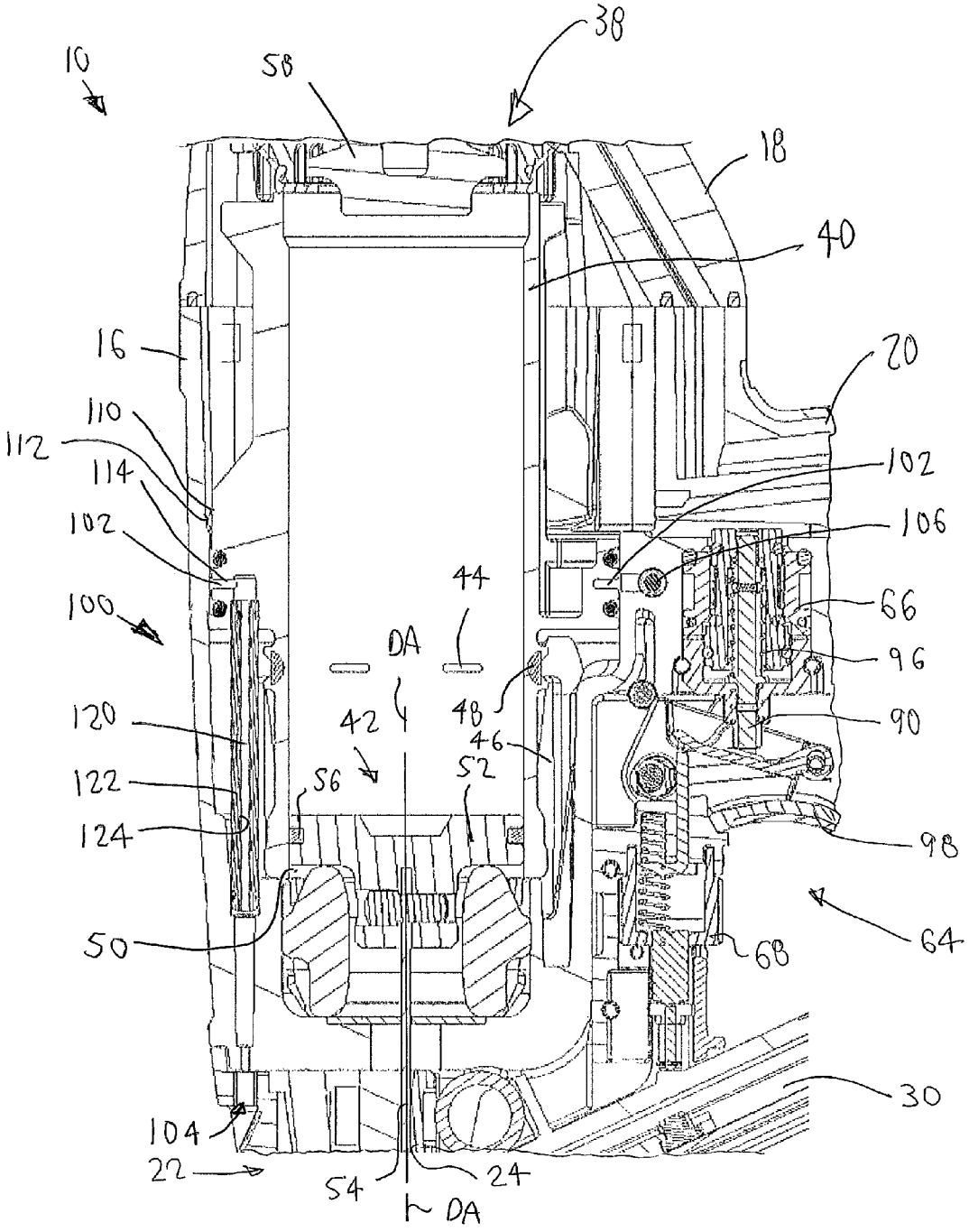



FIG. 1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DA
96
42
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120
52
122
56
124
98
50
64
68
30
104
22
54
24
DA

FIG. 2

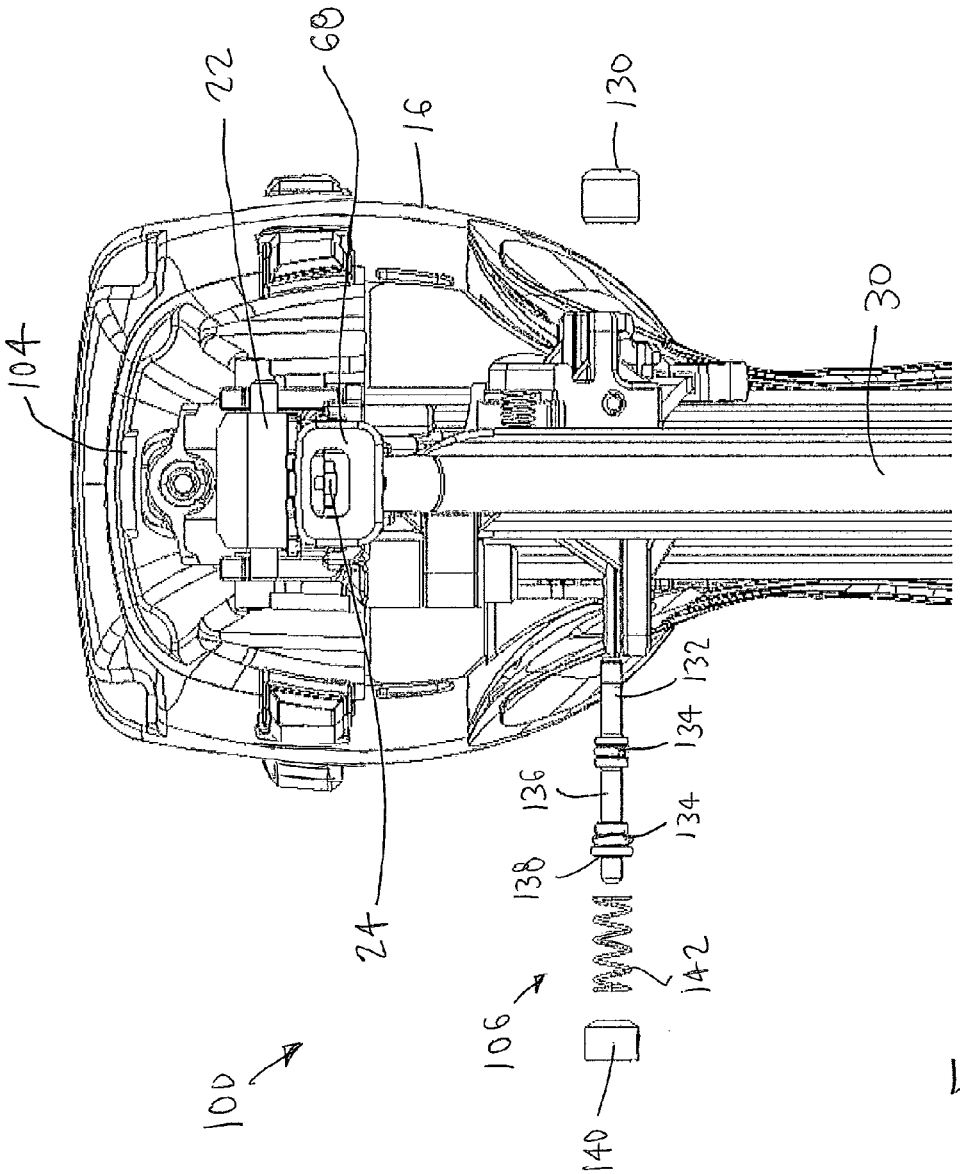


FIG. 3

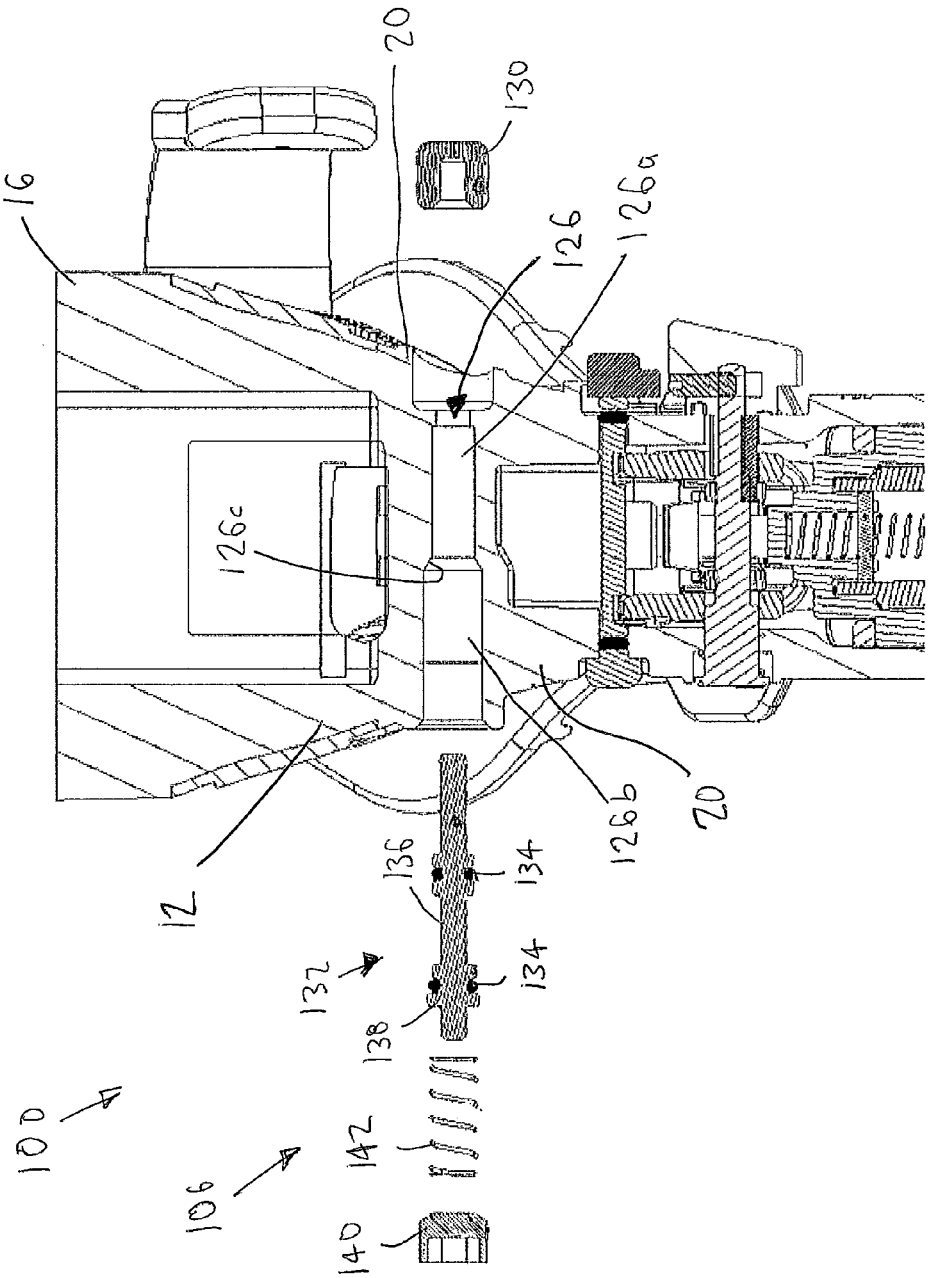
20
130
16
126
126a
126c
12
126b
20
136
134
132
134
138
100
142
106
140

FIG. 4

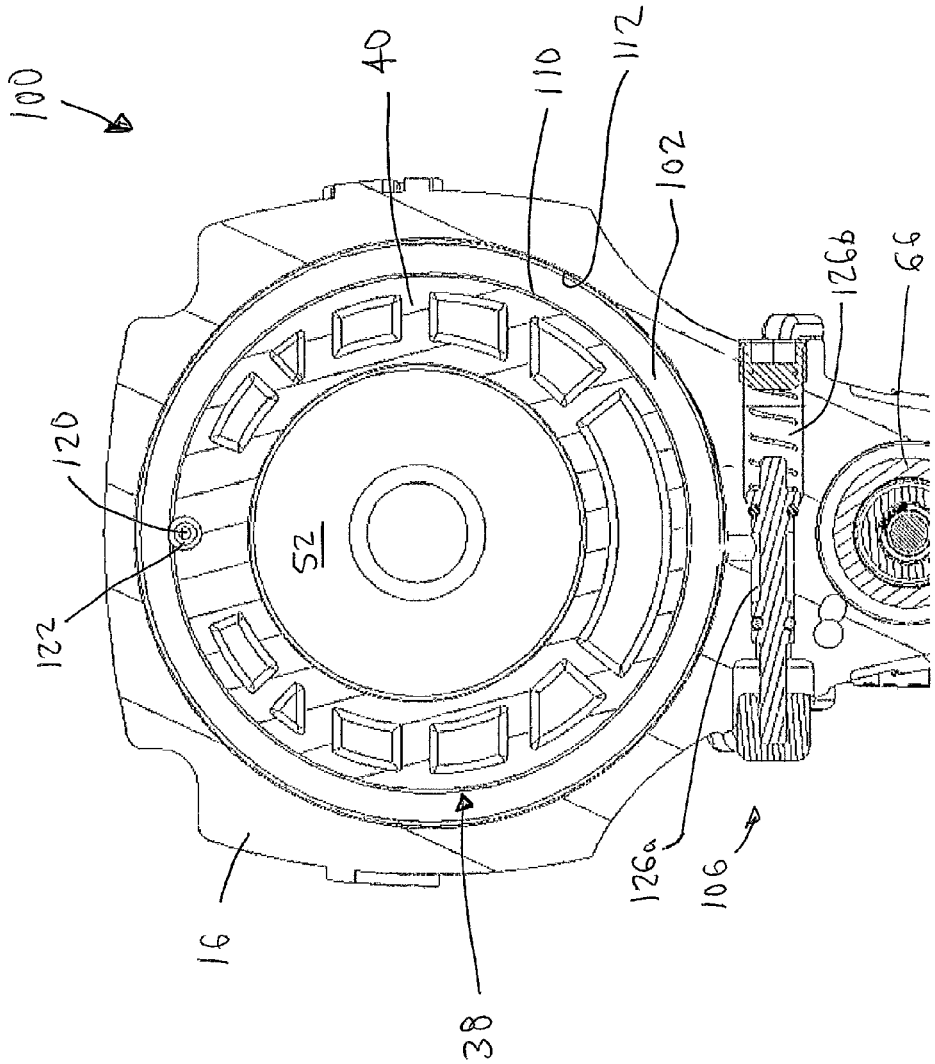


FIG. 5

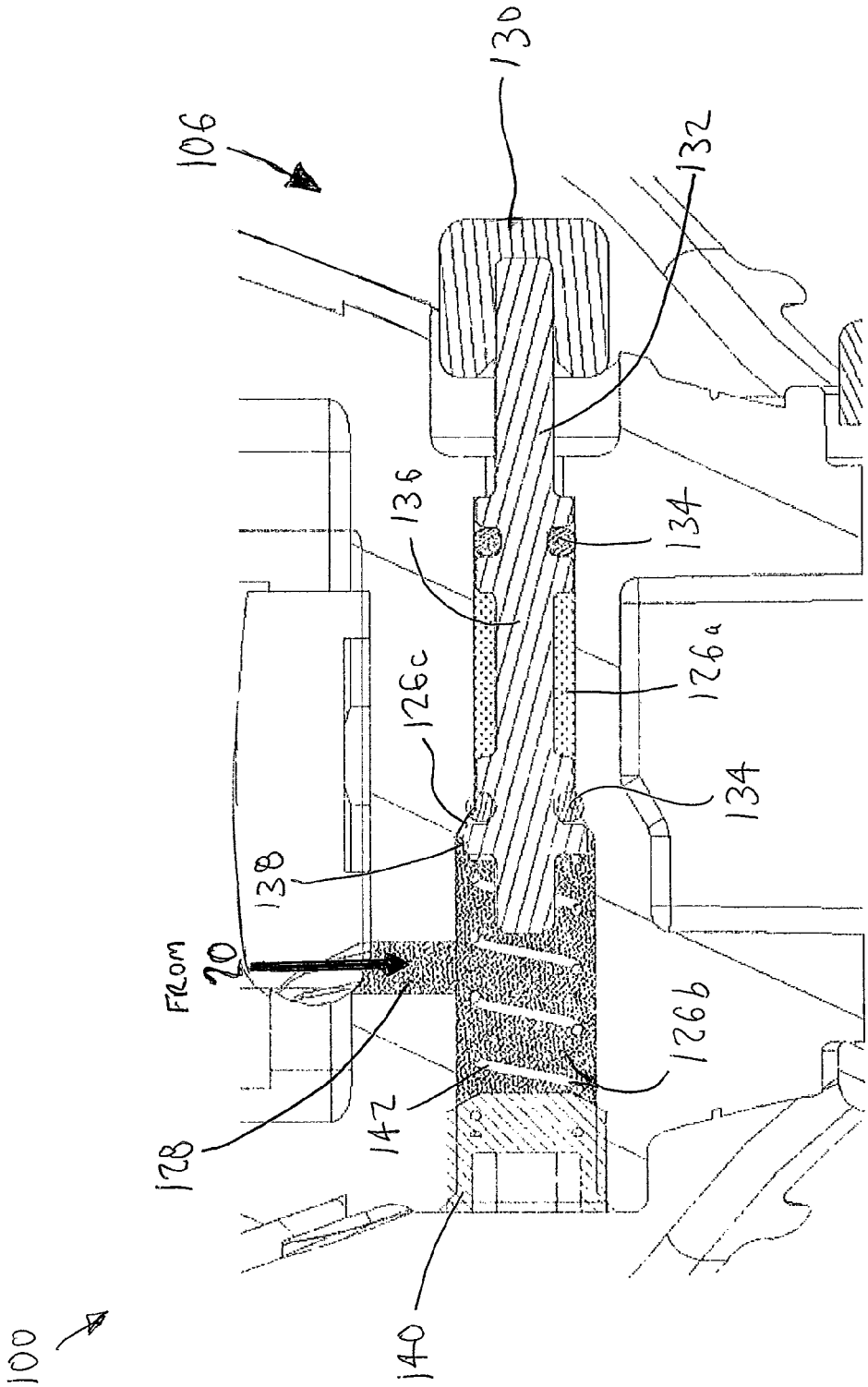
100
106
130
132
136
134
126c
126a
134
138
From 20
126b
128
147
140

FIG. 6

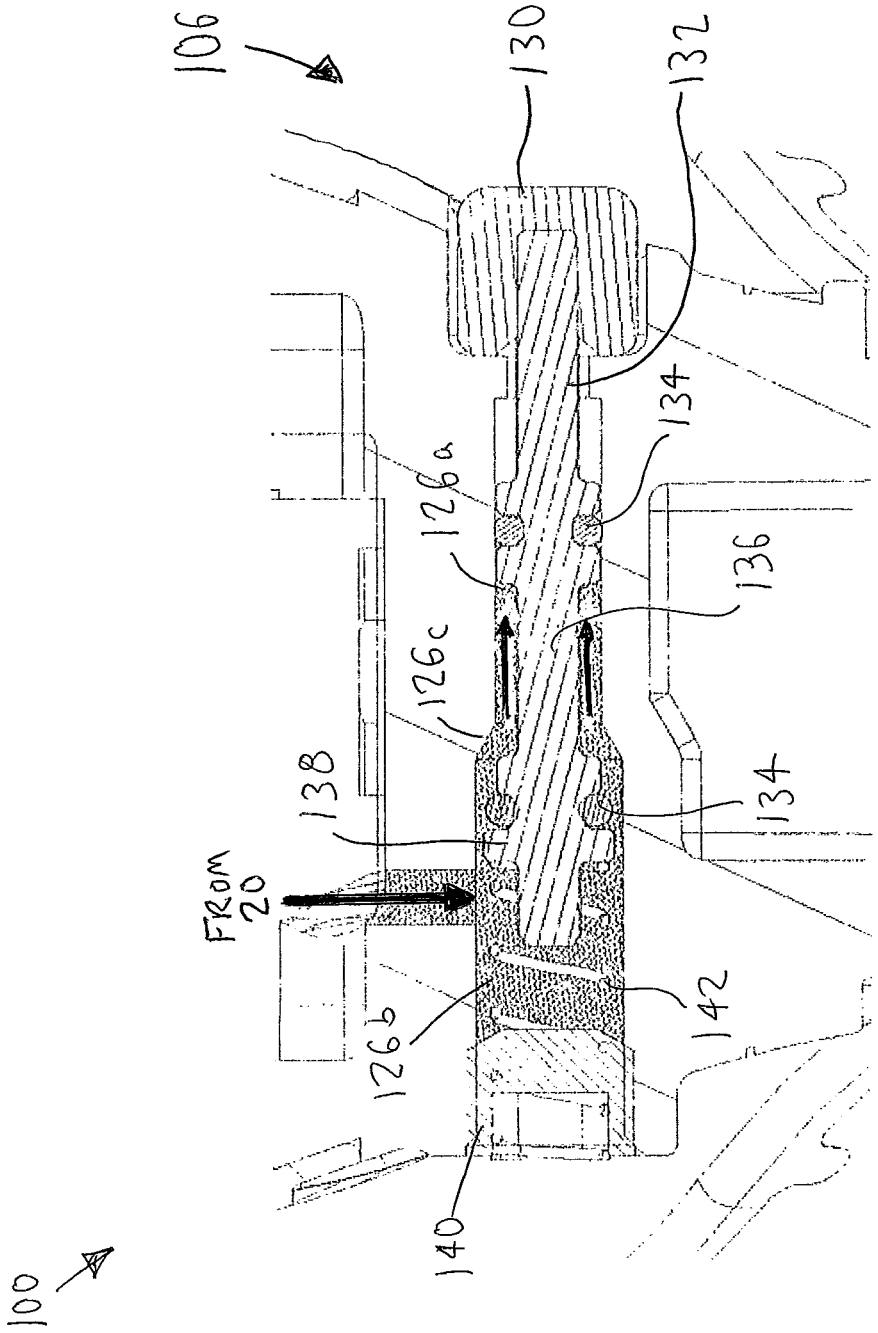


FIG. 7

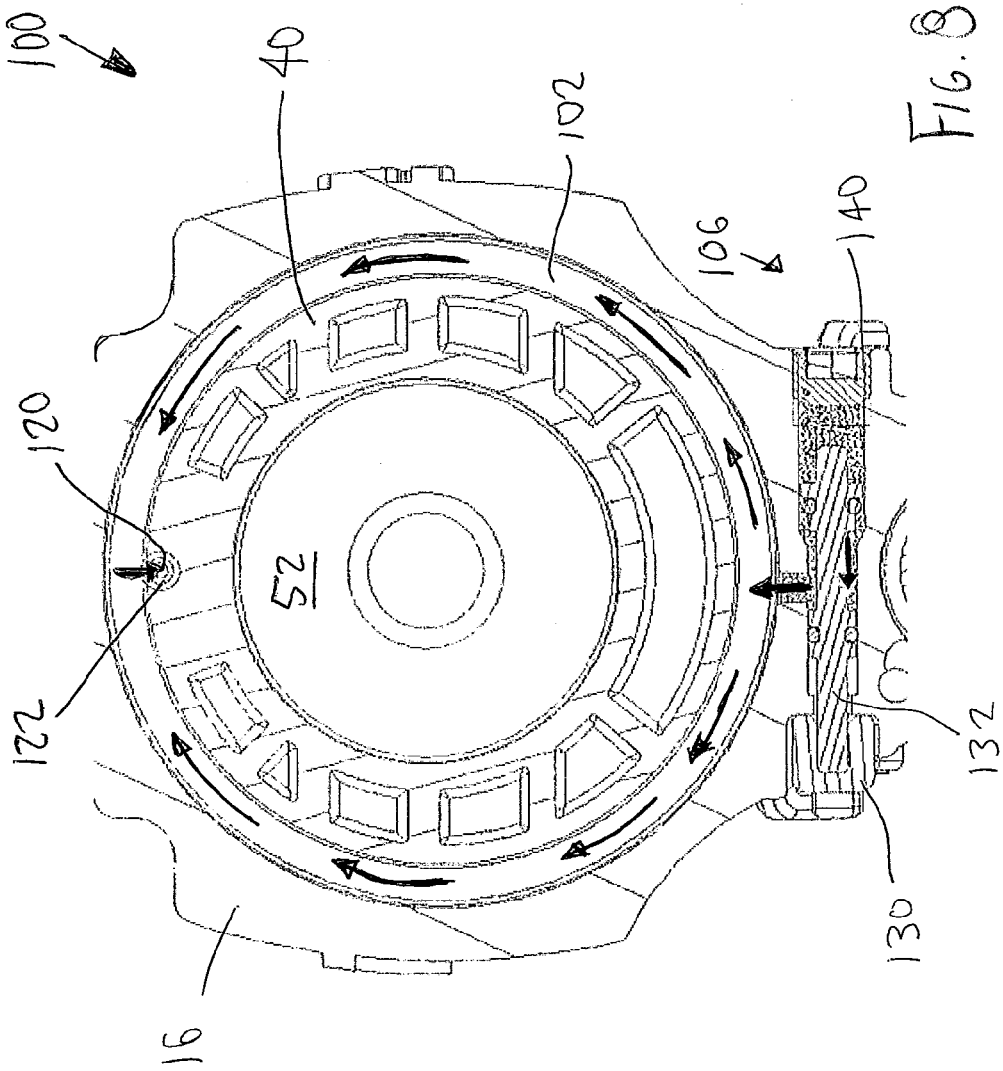


FIG. 8

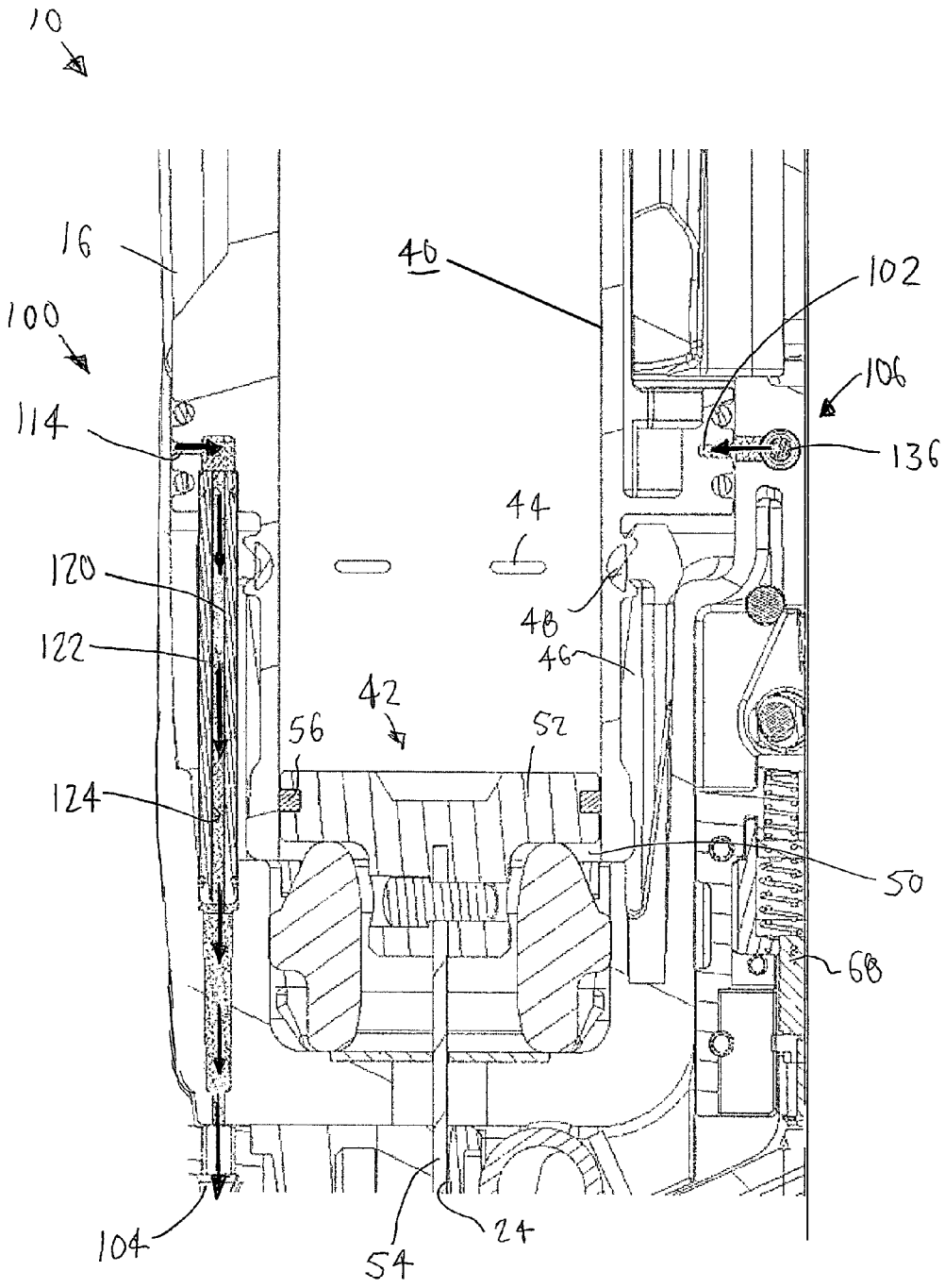
10
16
40
102
100
106
114
136
44
120
48
122
46
42
56
52
124
50
68
104
54
24

FIG. 9

# FASTENER DRIVING DEVICE WITH DUST BLOWER

## FIELD

The present invention is related to a fastener driving device that includes a dust blower.

## BACKGROUND

Fastener driving devices are often used in a construction setting in which dust may cover the target location for a fastener. This may make it challenging to accurately locate where a fastener is to be driven into the workpiece. In order to clean off the target location, the user of the fastener driving device may hold the fastener driving device with one hand, and use the other hand to manipulate a separate blower or brush.

Although there is at least one existing fastener driving device that has a built-in dust blower located near the head valve of the device, it takes two hands to use the dust blower, one hand to hold the device and one hand to operate the dust blower. Moreover, the outlet of the dust blower is located towards an upper portion of the device, which makes it awkward to use when needed.

## SUMMARY

It is desirable to have a fastener driving device with a built-in dust blower that is less cumbersome to use.

According to one aspect of the invention, there is provided a fastener driving device that includes a housing having an engine receiving portion and a handle portion. A drive engine is located in the engine receiving portion. The drive engine includes a cylinder and a piston reciprocally mounted within the cylinder. The piston includes a driver configured to move along a drive axis to drive a fastener during a drive stroke. A reservoir is at least partially located in the handle portion and is configured to receive a gas having a pressure greater than atmospheric pressure. The reservoir is in fluid communication with the drive engine. The fastener driving device also includes a trigger configured to operate the drive engine, and a dust blower configured to allow gas in the reservoir to be selectively communicated to atmosphere through an outlet in the engine receiving portion of the housing. The dust blower includes a passageway extending from the reservoir to the outlet in the engine receiving portion of the housing. The passageway at least partially circumnavigates the cylinder of the drive engine. The dust blower also includes an actuator configured to selectively open and close the passageway so that when the passageway is open, gas from the reservoir is communicated from the reservoir to the outlet, and when the passageway is closed, the gas from the reservoir is not communicated from the reservoir to the outlet.

According to another aspect of the invention, there is provided a fastener driving device that includes a housing having an engine receiving portion and a handle portion extending from the engine receiving portion. A nose assembly is operatively connected to the housing and defines a drive track. A drive engine located in the engine receiving portion of the housing, and includes a cylinder and a piston reciprocally mounted within the cylinder. The piston includes a driver configured to move along a drive axis to drive a fastener out of the drive track in the nose assembly during a drive stroke. A reservoir is at least partially located in the handle portion and is configured to receive a gas having a pressure greater than atmospheric pressure. The reservoir is in fluid communication with the drive engine. The fastener driving device includes a trigger configured to operate the drive engine. A dust blower is configured to allow gas in the reservoir to be selectively communicated to atmosphere through an outlet in the engine receiving portion of the housing. The outlet is positioned near the nose assembly and configured to direct at least a portion of the gas generally in the same direction as the drive axis.

According to another aspect of the invention, there is provided a fastener driving device that includes a housing having an engine receiving portion and a handle portion. A drive engine is located in the engine receiving portion, and includes a cylinder and a piston reciprocally mounted within the cylinder. The piston includes a driver configured to move along a drive axis to drive a fastener during a drive stroke. A reservoir is at least partially located in the handle portion and is configured to receive a gas having a pressure greater than atmospheric pressure. The reservoir is in fluid communication with the drive engine. The fastener driving device also includes a trigger configured to operate the drive engine. A dust blower is configured to allow gas in the reservoir to be selectively communicated to atmosphere through an outlet in the engine receiving portion of the housing. The dust blower includes an actuator on the housing. The actuator has a manually engageable portion positioned on or near the handle portion to enable a user grasping the handle portion with one hand to access the trigger and/or the manually engageable portion with the one-hand. The actuator is configured to selectively open and close a passageway between the reservoir and the outlet so that when the passageway is open, gas from the reservoir is communicated from the reservoir to the outlet, and when the passageway is closed, the gas from the reservoir is not communicated from the reservoir to the outlet.

These and other objects, features, and characteristics of the present invention, as well as the methods of operation and functions of the related elements of structure and the combination of parts and economies of manufacture, will become more apparent upon consideration of the following description and the appended claims with reference to the accompanying drawings, all of which form a part of this specification, wherein like reference numerals designate corresponding parts in the various figures. In one embodiment, the structural components illustrated herein are drawn to scale. It is to be expressly understood, however, that the drawings are for the purpose of illustration and description only and are not a limitation of the invention. In addition, it should be appreciated that structural features shown or described in any one embodiment herein can be used in other embodiments as well. It is to be expressly understood, however, that the drawings are for the purpose of illustration and description only and are not intended as a definition of the limits of the invention. As used in the specification and in the claims, the singular form of "a", "an", and "the" include plural referents unless the context clearly dictates otherwise.

## BRIEF DESCRIPTION OF THE DRAWINGS

Features of the fastener driving device in accordance with one embodiment are shown in the drawings, in which like reference numerals designate like elements. The drawings form part of this original disclosure in which:

FIG. **1** illustrates a perspective view of a fastener driving device according to an embodiment of the invention;

FIG. **2** illustrates a partial cross-sectional view of the fastener driving device of FIG. **1**;

FIG. **3** illustrates a partial bottom view of the fastener driving device of FIG. **1** with an actuator of a dust blower in exploded view;

FIG. **4** illustrates a partial cross-sectional view of the fastener driving device of FIG. **1**, with the actuator of the dust blower of FIG. **3** in exploded view;

FIG. **5** illustrates a partial cross-sectional view of a portion of the dust blower of FIG. **4**;

FIG. **6** illustrates a cross-sectional view of the actuator of the dust blower of FIG. **4** with an elongated member of the actuator in a first position;

FIG. **7** illustrates the elongated member of the actuator of FIG. **6** in a second position;

FIG. **8** illustrates the portion of the dust blower of FIG. **5** when the elongated member of the actuator is in the second position; and

FIG. **9** illustrates the portion of the dust blower of FIG. **2** when the elongated member of the actuator is in the second position.

## DETAILED DESCRIPTION

FIG. **1** illustrates a fastener driving device **10** according to an embodiment of the invention. The device **10** includes a housing **12** that defines a reservoir **14** therein. The housing **12** may be constructed from a lightweight yet durable material, such as magnesium. The reservoir **14** is configured to receive a pressurized gas that is used to power the device **10**. In an embodiment, the pressurized gas may be provided to the reservoir **14** from a compressor through a hose. The hose may be connected to the device **10** via a fitting **15** that may be attached to the housing **12**, or the pressurized gas may be provided to the reservoir **14** through a cartridge. For example, the pressurized gas may be air that has been compressed by a compressor, as is commonly used in pneumatic tools. It is also contemplated that any gas that releases energy upon expansion, such as a gas produced as a by-product of combustion, or a gas that is produced upon a phase transformation of a liquid, such as carbon dioxide may also be used to power the device **10**. The illustrated embodiment is not intended to be limiting in any way.

As illustrated, the housing **12** includes an engine receiving portion **16** and a cap **18** that is connected to the engine receiving portion **16** at one end. The housing **12** also includes a handle portion **20** that extends from the engine receiving portion **16**. As shown, the handle portion **20** may extend substantially perpendicularly from the engine receiving portion **16**. The handle portion **20** is configured to be received by a user's hand, thereby making the device **10** portable. The reservoir **14** is substantially defined by the handle portion **20**, although it is contemplated that a portion of the reservoir **14** may be defined by the engine receiving portion **16** as well. In an embodiment, the handle portion **20** may also include a second reservoir (not shown) that is configured to be open to atmosphere and is configured to allow exhaust gas to exit the device **10** through the handle portion **20**.

The device **10** also includes a nose assembly **22** that is connected to the housing **12**. The nose assembly **22** defines a fastener drive track **24** therein, as illustrated in FIG. **2**. A magazine assembly **30** is constructed and arranged to feed successive leading fasteners from a supply of fasteners contained therein along a feed track and into the drive track **24**. The supply of fasteners is urged toward the drive track **24** with a pusher that is biased towards the drive track **24** and engages the last fastener in the supply of fasteners. Although the illustrated magazine assembly **30** is configured to receive fasteners that are collated in a stick configuration, it is also contemplated that a magazine assembly that is configured to accommodate fasteners that are collated in a coil may also be used. The illustrated embodiment is not intended to be limiting in any way.

As shown in FIG. **2**, an engine **38** is disposed in the engine receiving portion **16** of the housing **12**. The engine **38** includes a cylinder **40** and a fastener driver **42** that is movably mounted in the cylinder **40**, and, hence, the housing **12**. The cylinder **40** is oriented such that its longitudinal axis substantially aligns with a longitudinal axis of the drive track **24**. The cylinder **40** includes a plurality of openings **44** that are arranged circumferentially around the cylinder **40** at an intermediate portion thereof. The openings **44** allow gas that is in the cylinder **40** to flow into a plenum **46** that is defined by an outside surface of the cylinder **40** and the housing **12**. The openings **44** are provided with seals **48** that act as one-way valves such that gas may exit the cylinder **40** into the plenum **46**, but gas in the plenum **46** may not enter the cylinder **40** through the openings **44**. Instead, gas may enter the cylinder **40** through at least one opening **50** that is located towards one end of the cylinder **40** near the drive track **24**, as shown in FIG. **2**. Movement of gas in and out of the cylinder **40** will be discussed in greater detail below in connection with the operation of the device **10**.

The fastener driver **42** is configured to enter the drive track **24** and drive the successive leading fasteners, one at a time, into the workpiece. The fastener driver **42** may have any configuration. In the illustrated embodiment, the fastener driver **42** includes a piston **52** and a drive rod **54** that is connected to the piston **52**. A seal **56** is provided between the piston **52** and an interior wall of the cylinder **40** so as to form a slidable seal. This allows pressure on one side of the piston **52** to be different from pressure on the other side of the piston **52** so that a pressure differential may effect movement of the piston **52**. The drive rod **54** may be connected to the piston **52** by any suitable fastening technique, such as a threaded or a welded connection. The illustrated embodiment is not intended to be limiting in any way. The drive rod **54** may have a substantially circular cross-section, or the drive rod **54** may have a cross-section that is D-shaped, or is shaped as a crescent, as would be understood by one of ordinary skill in the art.

The engine **38** also includes a head valve **58**, partially shown in FIG. **2** that is disposed above the cylinder **40**. The head valve **58** is constructed and arranged to substantially seal the top of the cylinder **40** from the reservoir **14** when the head valve **58** is in a closed position, and move away from the cylinder **40** when the head valve **58** is moved to an open position. A spring (not shown) is disposed between the head valve **58** and the cap **18** such that the head valve **58** is biased to the closed position when there is no pressurized gas in the device **10** or when the pressurized gas applies equal force on both sides of the head valve **58**. The head valve **58** is constructed and arranged to be actuated so as to allow the pressurized gas that is in the reservoir **14** to enter the cylinder **40** and move the fastener driver **42** through an operating cycle. Each cycle includes a drive stroke in which the driver **42** moves along a drive axis DA and drives the leading fastener into the workpiece, and a return stroke in which the driver **42** is returned to its initial position so that it is ready for another drive stroke.

The device **10** also includes an actuator **64** that is constructed and arranged to actuate the head valve **58**, and, hence, initiate the drive stroke. The actuator **64** includes a trigger valve **66** and a contact arm **68** that interacts with the trigger valve **66** through a mechanical linkage. The trigger valve **66** is constructed and arranged to allow passage of the pressur-

ized gas from the reservoir **14** to a chamber above the head valve **58** through a passageway (not shown), and to selectively allow passage of gas from the chamber through an exhaust opening in the trigger valve **66**.

The trigger valve **66** may be moved to the actuated position by pressing a valve stem **90** against the force applied on the valve stem **90** by the pressurized gas, and the bias of a spring **96** that is disposed within the trigger valve **66**. This may be done with the user's finger, or can be done with a trigger **98** that is rotatably mounted to the housing **12**. Triggers that have linear movement rather then rotational movement are also contemplated. When the trigger **98** is rotated toward the valve stem **90** while the contact arm **68** is depressed against the workpiece, the trigger **98** engages the valve stem **90** and presses the valve stem **90** against the bias of the spring **96**. When the trigger valve **66** is actuated, i.e. when the valve stem **90** is moved against the bias of the spring **96** and the pressurized gas, the passageway within the trigger valve **66** between the chamber above the head valve **58** and the exhaust opening is opened, and the pressurized gas in the chamber is now able to flow through the trigger valve and out the exhaust opening.

Actuation of the head valve **58**, or movement of the head valve **58** to the open position, will depend on whether the pressurized gas from the chamber above the head valve **58** is exhausted to atmosphere through the trigger valve **66**. Once the pressurized gas from the chamber starts to be exhausted, the pressure within the chamber drops. This pressure drop, when high enough, allows the head valve **58** to move to the open position due to the force being exerted on the head valve **58** by the pressurized gas within the reservoir **14**, which is at a greater pressure. Additional details of suitable engines and actuators for the fastener driving device **10** may be found in, for example, U.S. Pat. Nos. 7,134,586, 7,143,918, and 7,677,426, the entire contents which are incorporated herein by reference.

As illustrated in FIGS. **2-9**, the fastener driving device **10** also includes a dust blower **100**. The dust blower **100** is configured to allow pressurized gas in the reservoir **14** to be selectively communicated to atmosphere, as discussed in further detail below. In one embodiment, the dust blower **100** includes a passageway **102** that extends from the reservoir **14** to an outlet **104** in the engine receiving portion **16** of the housing **12**, and an actuator **106** that is configured to selectively open and close the passageway **102**. When the passageway **102** is open, gas in the reservoir **14** is communicated from the reservoir **14'** to the outlet **104** through the actuator **106** and the passageway **102**. When the passageway **102** is closed, the gas is not communicated from the reservoir **14** to the outlet **104**.

As illustrated in FIG. **5**, the passageway **102** at least partially circumnavigates the cylinder **40** of the drive engine **38**. The passageway **102** may be defined by a gap between an outer surface **110** of the cylinder **40** and an inner surface **112** of the engine receiving portion **16** of the housing **12**. In the illustrated embodiment, the outer surface **110** of the cylinder **40** may define a recess **114** or groove (see FIG. **2**) that partially defines the passageway **102**. In an alternative embodiment (not shown), the inner surface **112** of the engine receiving portion **16** of the housing **12** may define a recess or groove that partially defines the passageway **102**. The illustrated embodiment is not intended to be limiting in any way.

The passageway **102** is connected to the outlet **104** via a second passageway **120** that extends perpendicularly from the passageway **102** and substantially parallel to the longitudinal axis of the cylinder, as illustrated in FIG. **2**. As illustrated, a tube **122** having an inner lumen **124** is placed between the cylinder **40** and the engine receiving portion **16** of the housing **12** to define the second passageway **120**. The diameter of the inner lumen **124** may be sized so that second passageway **120** may amplify or reduce the pressure of the gas entering the second passageway **120** so that the desired pressure of gas is delivered to the outlet **104**. In an embodiment, the second passageway **120** may be entirely defined by the engine receiving portion **16** of the housing **12**, or may be entirely defined by the cylinder **40**, or may be defined by various surfaces of the engine receiving portion **16** of the housing **12** and the cylinder **40** in a similar manner that the passageway **102** is defined. The illustrated embodiment is not intended to be limiting in any way.

As can be appreciated from FIG. **9**, the outlet **104** comprises an opening in the housing **12** positioned near the nose assembly **22**. The outlet **104** is configured to direct at least a portion of the gas exiting the second passageway **120** generally in the same direction (e.g., from 0° to about 45° relative to the drive axis DA) that the fastener is driven out of the fastener driving device when the device is in use. The outlet **104** may have any suitable shape that allows the gas to exit the dust blower **100** in the desired direction and at the desired pressure. In the illustrated embodiment, the outlet **104** has an elongated shape that allows the flow of the gas to fan out across a width, as shown in FIG. **3**. In an embodiment, the outlet **104** may have a circular shape that allows the flow of the gas to be more directed and concentrated than the flow of gas exiting an outlet having an elongated shape. In one embodiment, at least a portion of the gas is directed in a direction that is parallel to (i.e. at an angle of 0° relative to) the drive track axis. In another embodiment, the gas is directed generally at an angle of less that 30° relative to the drive track axis. In another embodiment, the gas may fan out at an angle; and in one embodiment, the included angle is 60° or less. In one embodiment, the included angle is 30° or less. In one embodiment; the included angle is bisected by a line that is generally parallel to the drive axis DA. The illustrated embodiment is not intended to be limiting in any way. For example, in an alternative embodiment, an adjustable nozzle may be positioned in the outlet **104** so that the precise direction of the pressurized gas that exits the outlet may be changed based on the user's preference.

As illustrated in FIG. **4**, the housing **12** of the fastener driving device **10** includes an elongated chamber **126** that extends through the housing **12** and is configured to receive the actuator **106** of the dust blower **100**, as discussed in further detail below. Although the elongated chamber **126** is illustrated as being in the handle portion **20** of the housing **12**, the elongated chamber **126** may be located in the engine receiving portion **16** of the housing **12**. In an embodiment, the elongated chamber **126** may not extend entirely through the housing **12**, but instead may be capped off at one end by the housing **12**. The elongated chamber **126** generally includes a first portion **126***a* having a surface defined by a first diameter and a second portion **126***b* having a surface defined by a second diameter that is greater than the first diameter. The elongated chamber **126** also includes a transition surface **126***c* in between the surface that defines the first portion **126***a* and the surface that defines the second portion **126***b*. The first portion **126***a* of the elongated chamber **126** is in fluid communication with the passageway **102**, as illustrated in FIG. **5**, and the second portion **126***b* is in fluid communication with the reservoir **14** via a third passageway **128** that is located between the reservoir **14** and the elongated chamber **126**, as generally illustrated in FIG. **6**.

The actuator **106** includes a manually engageable portion **130**, an elongated member **132** that is operatively connected to the manually engageable portion **130**, and a pair of seals

134 spaced apart along the elongated member 132. The manually engageable portion 130 may be in the form of a push button that is configured to be pushed by a user's thumb or finger, as illustrated in the Figures, and may be attached to one end of the elongated member 132. Any suitable means for attaching the push button to the elongated member 132 may be used, such as a press fit, an adhesive, etc. In another embodiment, the manually engageable portion 30 may be in the form of a rotatable switch or a slide, or any other suitable structure that is configured to allow the user to actuate the actuator 106. The illustrated embodiment is not intended to be limiting in any way.

The elongated member 132 generally includes a first portion 136 configured to be received by the first portion 126*a* of the elongated chamber 126, and a second portion 138 configured to be received by the second portion 126*b* of the elongated chamber 126. As illustrated, the first portion 136 has section that has a smaller diameter than the second portion 138 and is located between the pair of seals 134. The seals 134, which may be o-rings, are configured to engage the inner surface that defines the first portion 126*a* of the elongated chamber 126 when the elongated member 132 is positioned within the chamber 126 and provide a seal between the first portion 126*a* of the elongated chamber 126 and the first portion 136 of the elongated member 132 when the elongated member 132 is in a first position, as illustrated in FIG. 6.

The actuator 106 also includes an end cap 140 and a biasing member 142, which may be a spring, for example a coil spring, that is positioned between the elongated member 132 and the end cap 140. The biasing member 142 is configured to bias the elongated member 132 in the first position, as discussed in further detail below. Any suitable biasing member may be used to bias the elongated member 132. The illustrated embodiment is not intended to be limiting in any way. The end cap 140 may be a set screw that is screwed into the housing 12, as illustrated in FIG. 5, and configured to seal the elongated chamber 126 at one end thereof.

When the elongated member 132 is in the first position, as illustrated in FIG. 6, the second portion 138 of the elongated member 132 is positioned against the transition surface 126*c* so that second portion 126*b* of the elongated chamber 126 is sealed from the first portion 126*a* of the elongated chamber 126, which prevents pressurized gas from being communicated from the reservoir 14 to the passageway 102 via the chamber 126. When the elongated member 132 is in a second position, as illustrated in FIG. 7, the first portion 136 of the elongated member 132 is partially positioned within the second portion 126*b* of the elongated chamber 126, which allows the pressurized gas from the reservoir 14 to pass through elongated chamber 126, through the passageway 102, and out the outlet 104, as generally illustrated in FIGS. 7-9.

To actuate the dust blower 100 by moving the elongated member 132 from the first position to the second position, the user may use a thumb (or finger) to press the manually engageable portion 130 of the actuator 106 towards the housing 12 and against the bias of the bias member 142, which opens a fluid flow path between the reservoir 14 and the outlet 104, as described above. To stop the flow of the pressurized gas from the reservoir 14 to the outlet 104, the user may take the thumb (or finger) off of the manually engageable portion 130 so that the biasing member 142 may move the elongated member 132 from the second position back to the first position, which will stop the flow of the pressurized gas from the reservoir to the outlet 104.

In the illustrated embodiment, the manually engageable portion 130 of the actuator 106 is located near the trigger 98 of the fastener driving device 10, as illustrated in FIG. 1, which may allow the user to grasp the handle 20 and operate the dust blower 100 and the trigger 98 without having to regrasp the fastener driving device 10. For example, four fingers of the user may grasp the handle 20 while the thumb is used to push the manually engageable portion 130. In an alternative arrangement (not shown), the manually engageable portion can be placed so that it is more convenient for the user's trigger finger or index finger to actuate the manually engageable portion 130 while the other fingers grasp the handle 20. The location of the outlet 104 of the dust blower 100 may allow the user to quickly blow off dust from the workpiece and position the fastener driving device on the workpiece in an operative position with minimal movement of the fastener driving device 10. In operation, the user may clear dust from the workpiece by using a thumb (or finger) to operate the dust blower 100, as described above, before or as the fastener driving device 10 is being positioned at the desired location on the workpiece, and then actuate the trigger valve 66 via the trigger 98 after the fastener driving device 10 is positioned at the desired location on the workpiece and the contact arm 68 is depressed against the workpiece.

While specific embodiments of the invention have been described above, it will be appreciated that the invention may be practiced otherwise than as described. The descriptions above are intended to be illustrative, not limiting. Thus, it will be apparent to one skilled in the art that modifications may be made to the invention as described without departing from the scope of the claims set out below.

What is claimed is:

1. A fastener driving device comprising:
- a housing having an engine receiving portion and a handle portion;
- a drive engine located in the engine receiving portion, the drive engine comprising a cylinder and a piston reciprocally mounted within the cylinder, the piston comprising a driver configured to move along a drive axis to drive a fastener during a drive stroke;
- a reservoir at least partially located in the handle portion, the reservoir configured to receive a gas having a pressure greater than atmospheric pressure, the reservoir being in fluid communication with the drive engine;
- a trigger configured to operate the drive engine; and
- a dust blower configured to allow gas in the reservoir to be selectively communicated to atmosphere through an outlet in the engine receiving portion of the housing, the dust blower comprising
  - a passageway extending from the reservoir to the outlet in the engine receiving portion of the housing, the passageway at least partially circumnavigating the cylinder of the drive engine, and
  - an actuator configured to selectively open and close the passageway so that when the passageway is open, gas from the reservoir is communicated from the reservoir to the outlet, and when the passageway is closed, the gas from the reservoir is not communicated from the reservoir to the outlet.

2. The fastener driving device according to claim 1, wherein the actuator is located on the handle portion.

3. The fastener driving device according to claim 2, wherein the actuator is located near the trigger.

4. The fastener driving device according to claim 1, wherein the housing comprises an elongated chamber, and wherein the actuator comprises an elongated member slidingly received by the elongated chamber, a first seal surrounding a circumference of the elongated member, and a second seal surrounding the circumference of the elongated member and spaced from the first seal along the elongated member,

wherein when the elongated member is in a first position, the first seal contacts an inner surface of the elongated chamber to block the passageway, and wherein when the elongated member is in a second position, the first seal does not contact the inner surface of the elongated chamber to open the passageway and allow the gas from the reservoir to flow through the passageway to the outlet.

**5**. The fastener driving device according to claim **4**, wherein the actuator further comprising a biasing member configured to bias the elongated member in the first position.

**6**. The fastener driving device according to claim **5**, wherein the biasing member is a coil spring.

**7**. The fastener driving device according to claim **5**, wherein the elongated chamber comprises a first surface defined by a first diameter, a second surface defined by a second diameter that is larger than the first diameter, and transition surface in between the first surface and the second surface, and wherein the elongated member comprises a portion configured to engage the biasing member on a first side and to engage the transition surface on a second side that is opposite the first side to hold the elongated member in the first position.

**8**. The fastener driving device according to claim **7**, wherein the first seal is located adjacent the second side and configured to engage the transition surface when the elongated member is in the first position.

**9**. The fastener driving device according to claim **5**, wherein the actuator further comprises a push button connected to one end of elongated member, the push button being configured to receive a thumb or finger of a user of the fastener driving device to enable the user to move the elongated member against the bias of the biasing member to move the elongated member from the first position to the second position.

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